



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
 United States Patent and Trademark Office  
 Address: COMMISSIONER FOR PATENTS  
 P.O. Box 1450  
 Alexandria, Virginia 22313-1450  
 www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/769,879	01/24/2001	Ma-Chi Chen		5488

7590 11/29/2005  
 Ma-Chi Chen  
 19721 Auburn CT  
 Cupertino, CA 95014

EXAMINER
----------

SLACK, NAKO N

ART UNIT	PAPER NUMBER
----------	--------------

3635

DATE MAILED: 11/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

09/769,879

**Applicant(s)**

CHEN, MA-CHI

**Examiner**

Naoko Slack

**Art Unit**

3635

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 09 September 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

Applicant's amendment received September 9, 2005 has been entered, and applicant's remarks have been carefully considered but are not convincing.

Firstly, Applicant admits that the instant invention comprises the combination of three known earthquake resistant systems: a V-shape braced system, a tension braced system, and a gravity potential energy system (page 1, applicant's amendment). In the design of a two-story building, which is considered a multi-story building, a tension-only braced system is adequate to resist seismic-induced lateral forces. Therefore, the use of additional known systems that resist lateral forces is considered redundant.

Furthermore, applicant states that the gravity potential energy system "has never been used in structural systems in a simple and reliable way to resist earthquakes" (page 2), which undermines applicant's claim that the gravity potential energy system in combination with the two aforementioned systems will form a "simple and reliable structural system" (page 1). That is, if the gravity potential energy system has never been used in structural systems in a simple and reliable way to resist earthquakes, how would its inclusion contribute to form a simple and reliable structural system?

Applicant explains that in the instant invention, gravity load is carried by the tension-only braces to generate the gravity potential energy (page 2), but no structure is presented in the claims to differentiate this system from the conventional V-shaped brace system. Applicant also states that the instant invention employs very slender tension-only braces (page 2); however, this structural feature has not been stated in the claims. Because applicant's claim language fails to state structural features that

Art Unit: 3635

differentiate the instant invention from the conventional tension-only bracing system, the claims have been finally rejected in this office action. A Request for Continued Examination may be filed with claims drawn to the differentiating structural features disclosed in applicant remarks.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-6 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by article "Procedure and Commentary for Braced Frames", NEHRP Handbook, 1992 (hereinafter referred to as NEHRP).

Claim 1:

NEHRP discloses earthquake resistant multi-story buildings utilizing gravity potential energy to absorb earthquake energy, comprising:

- (a) a plurality of tension-only braces (Figures 6.0 and 6.1),
- (b) a plurality of beams with substantial gravity load,
- (c) a plurality of columns, and
- (d) means for jointing the low end of a pair of said braces arranged in a v-shape (central building, Figure 6.1) to the center of one of said beam, and the two upper ends

Art Unit: 3635

to said columns at each end of said beam, respectively, and repeating the jointing process at predetermined locations.

Claim 1(e) states a "whereby" clause, describing the desired behavior of the bracing in response to earthquake forces. The whereby clause does not further limit the structural features of the building but states an intended behavior of the building subject to a lateral load. It need only be shown that the structure is capable of performing as described. Clearly, the V-braced building is capable of withstanding lateral earthquake loads, as the braced frames are specifically designed to resist lateral forces (page 1, section 6.0, line 1).

Claim 2:

NEHRP's tension-only brace may be made of very light, tension-only rod bracing (page 1, section 6.1, line 6).

Claim 3:

The building may be constructed of steel or of reinforced concrete (page 1, section 6.1, lines 9-13).

Claim 4:

The joint location of brace to the beam may be at any point within the span of said beam, preferably at concentrated load to be most efficient. NEHRP illustrates the joint of brace to beam to be centrally located (Figure 6.1).

Claim 5:

A method of utilizing gravity potential energy to absorb earthquake energy for a multi-story building with columns and beams, comprising the steps of :

Art Unit: 3635

(a) installing a pair of v-shaped tension-only braces with lower end at center of said beam and upper ends to said columns at the two ends of said beam (NEHRP, Figure 6.1)

(b) repeating the jointing process at all predetermined locations of said building (multiple levels as illustrated in Figure 6.1),

Claim 5(c) states a “whereby” clause, describing the desired behavior of the bracing in response to earthquake forces. The whereby clause does not further limit the method with specific steps to construct the building but states an intended behavior of the building subject to a lateral load. It need only be shown that the structure is capable of performing as described. Clearly, the V-braced building is capable of withstanding lateral earthquake loads, as the braced frames are specifically designed to resist lateral forces (page 1, section 6.0, line 1). The gravity potential energy is stored in the weight of the beams and produces tension in the braces, as lower ends of the braces are attached to the central portion of the beams.

Claim 6:

NEHRP discloses a wind resistant multi-story building utilizing gravity load to resist wind load, comprising:

- (a) a plurality of v-shaped tension-only braces (Figure 6.1)
- (b) a plurality of beams with substantial gravity load,
- (c) a plurality of columns, and
- (d) means for jointing said braces to said beams and columns at predetermined locations,

Art Unit: 3635

Claim 1(e) states a "whereby" clause, describing the desired behavior of the bracing in response to lateral wind loads. The whereby clause does not further limit the structural features of the building but states an intended behavior of the building subject to a lateral load. It need only be shown that the structure is capable of performing as described. Clearly, the V-braced building is capable of withstanding lateral wind loads, as the braced frames are specifically designed to resist lateral forces (page 1, section 6.0, line 1).

***Final***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Art Unit: 3635

***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Naoko Slack whose current telephone number is 571-272-6848. The examiner can normally be reached on Mon-Fri (6:00 am-2:30pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carl D. Friedman can be reached on 571-272-6842. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Naoko Slack  
Primary Examiner  
Art Unit 3635

NS  
November 23, 2005